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EXAMINER	
BULLOCK JR, LEWIS ALEXANDER	
ART UNIT	PAPER NUMBER
2195	

DATE MAILED: 11/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No.	Applicant(s)	
	09/903,911	LUFT, SIEGFRIED	
	Examiner	Art Unit	
	Lewis A. Bullock, Jr.	2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 August 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-50* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-50* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 February 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9/30/05; 2/4/05*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Drawings

Applicant states that a new corrected drawing is submitted. However, there is no drawing submitted with the response.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4, 7, 8, 12-19, 23, 25, 30-43, 45, 48 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over "An Itinerary-Diagram based Apprach for Mobile Agent Application Development" by CHEN et al. in view of KLEIN (U.S. Patent 5,329,626).

As to claim 1, CHEN teaches a tangible machine-readable medium that provides instructions, which when executed by a set of one or more processors, cause the set of processors to perform operations comprising: instantiating a coordinator transaction agent (Master instance) that includes an itinerary (virtual graph) and a state machine (state machine) (pg. 211, "Our MSM model supports both mobility behavior and interaction behavior of agents. Unlike Lentini's, we use multiple state machines: Each agent is modeled by a state machine; the interaction among agents is models by the message-sending among these machines; the migration/cloning of an agent is by

sending a message from the agent to a specific site to create a new copy of itself and then ending/continuing the execution in the current site."), said itinerary indicating a plurality of network elements (list of virtual sites / sites), the plurality of network elements in communication with the coordinator transaction agent (via the Master instance is able to create a copy of itself and forward the copy to one of the virtual sites / sites listed in the virtual graph); the coordinator transaction agent (Master Instance) causing itself to be replicated (copied) onto the plurality of network elements (virtual sites) according to the itinerary (virtual graph) (pg. 216, "The Master instance knows beforehand which virtual sites have to be visited. (This can be achieved by looking at the virtual graph.. This information is conveyed to the first Scout instance, and then to the next Scout instance, and then to the Scout instance, so on. This way, each Scout instance knows whether it is the one to stop the creation of another."); each of the replicated transaction agents (Scout instance) causing an indication of their replication (copy) to be communicated back to the coordinator transaction agent (via communicating results, etc. to Master instance) (pg. 215-216, "This Master does the following: i) creates a Scout instance; ii) collects information reported by (possible more than one) Scout instances; iii) post-processes the collected information, reports the result to the user, and kills itself."); and the coordinator transaction agent (Master instance) coordinating operations of the state machine (state machine) in each of the replicated transaction agents (Scout instance) to implement a distributed state machine.

However, CHEN does not explicitly state that the sites are physical systems or network elements. KLEIN teaches agent environment wherein agents represent a

particular computation as a finite state machine and generates child agents that are sent to remote sites on other data processing systems to execute sub-transactions of an overall transaction and thereby change the state of the various agents in particularly a coordinator agent and other agents (col. 1, lines 47-68; col. 1, lines 20-28; col. 2, lines 58-67; col. 3, lines 4-52; col. 15, lines 19 – col. 16, line 21). Therefore, it would be obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of CHEN with the teachings of KLEIN in order to facilitate the flexibility in making state transitions in each agent dependent on the status of other agents cooperating in the distributed process (col. 2, lines 34-37). However, KLIEN does not explicitly teach that the systems are network elements. Official Notice is taken in that it is well known in the art that network elements are switches, routers, application servers, file servers, end-user workstations, etc. CHEN teaches the approach is to design mobile agent applications for content-based multimedia information retrieval or electronic commerce on the Internet (pg. 209, Introduction) while KLIEN teaches that the remote sites are remote data processing systems (col. 1, lines 14-28). It would be obvious that in for the agent to retrieve documents from various sites the agent is being sent to remote computer systems, i.e. application servers, file servers, etc. Therefore, it would be obvious to one skilled in the art that the remote computer systems are network elements.

As to claim 16, CHEN teaches a tangible machine readable medium that provides instructions, which when executed by a set of one or more processors, cause

the set of processors to perform operations comprising: instantiating a coordinator transaction agent (Master instance) that includes an itinerary (virtual graph) and a state machine (state machine) (pg. 211, "Our MSM model supports both mobility behavior and interaction behavior of agents. Unlike Lentini's, we use multiple state machines: Each agent is modeled by a state machine; the interaction among agents is models by the message-sending among these machines; the migration/cloning of an agent is by sending a message from the agent to a specific site to create a new copy of itself and then ending/continuing the execution in the current site."), the itinerary indicating a plurality of network elements (list of virtual sites / sites) onto which the transaction agent (Master instance / Scout instance) is to be replicated (copied), the plurality of network elements (list of virtual sites/ sites) in communication with the transaction agent (via the Master instance is able to create a copy of itself and forward the copy to one of the virtual sites / sites listed in the virtual graph); the coordinator transaction agent (Master instance) causing itself to be replicated and transmitted out (pg. 216, "The Master instance knows beforehand which virtual sites have to be visited. (This can be achieved by looking at the virtual graph.. This information is conveyed to the first Scout instance, and then to the next Scout instance, and then to the Scout instance, so on. This way, each Scout instance knows whether it is the one to stop the creation of another."); the coordinator transaction agent (Master instance) receiving from each of the replicated transaction agents (Scout instances) an indication of their replication (via communicating results, etc. to Master instance) (pg. 215-216, "This Master does the following: i) creates a Scout instance; ii) collects information reported by (possible more

than one) Scout instances; iii) post-processes the collected information, reports the result to the user, and kills itself."); the coordinator transaction agent (Master instance) transmitting an indication for delivery to each of the replicated transaction agents that instructs them to perform a currently selected step of the state machine in their network element (via exchanging messages to satisfy a specific need of the collective goal); the coordinator transaction agent (Master instance) receiving from each of the replicated transaction agents (Scout instances) an indication of their completion of the currently selected step (output message / result); and the coordinator transaction agent (Master instance) selecting a next state as the currently selected state of the state machine and repeating the transmitting and receiving steps until a final state of the state machine is reached (pg. 216, The Multiple State machine model, "Each object in this model is a state machine, which is an instance of a state machine type... In this model, state machines can receive input messages and send out output messages....MSM model can support both the mobility and interaction behavior of agents. This is because each agent's behavior is modeled as a state machine; the interaction among agents is models by the message-sending among these state machines; the migration/cloning of an agent is by sending a message from the agent to a specific site to create a new copy of itself and ending/continuing the executing in the current site."; pg. 219, 5.1.2 An example, "... In op_seq1, the instance of Scout will do the following....The information above will be used in Step three to revise templates and build the final state machine."; see also pages 219-222 that shows how the state machines create other objects and interact).

However, CHEN does not explicitly state that the sites are physical systems or network elements. KLEIN teaches agent environment wherein agents represent a particular computation as a finite state machine and generates child agents that are sent to remote sites on other data processing systems to execute sub-transactions of an overall transaction and thereby change the state of the various agents in particularly a coordinator agent and other agents (col. 1, lines 47-68; col. 1, lines 20-28; col. 2, lines 58-67; col. 3, lines 4-52; col. 15, lines 19 – col. 16, line 21). Therefore, it would be obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of CHEN with the teachings of KLEIN in order to facilitate the flexibility in making state transitions in each agent dependent on the status of other agents cooperating in the distributed process (col. 2, lines 34-37). However, KLIEN does not explicitly teach that the systems are network elements. Official Notice is taken in that it is well known in the art that network elements are switches, routers, application servers, file servers, end-user workstations, etc. CHEN teaches the approach is to design mobile agent applications for content-based multimedia information retrieval or electronic commerce on the Internet (pg. 209, Introduction) while KLIEN teaches that the remote sites are remote data processing systems (col. 1, lines 14-28). It would be obvious that in for the agent to retrieve documents from various sites the agent is being sent to remote computer systems, i.e. application servers, file servers, etc. Therefore, it would be obvious to one skilled in the art that the remote computer systems are network elements.

As to claim 17, refer to claim 16 for rejection.

As to claim 23, refer to claim 16 for rejection.

As to claim 43, refer to claim 16 for rejection.

As to claim 2, CHEN teaches the coordinator transaction agent (Master instance) causing communication of a replication (copy) of the coordinator transaction agent to a first of the plurality of network elements (virtual sites / sites); the replicated transaction agent (Scout instance) in the first network element causing communication of a replication (copy) of itself to a second of the plurality of network elements (virtual site / site) (pg. 216, "The Master instance knows beforehand which virtual sites have to be visited. (This can be achieved by looking at the virtual graph.. This information is conveyed to the first Scout instance, and then to the next Scout instance, and then to the Scout instance, so on. This way, each Scout instance knows whether it is the one to stop the creation of another."; pg. 215-216, "This Master does the following: i) creates a Scout instance; ii) collects information reported by (possible more than one) Scout instances; iii) post-processes the collected information, reports the result to the user, and kills itself.").

As to claim 14, refer to claim 2 for rejection.

As to claim 15, Official Notice is taken in that it is well known in the art that network elements are switches, routers, application servers, file servers, end-user workstations, etc. CHEN teaches the approach is to design mobile agent applications for content-based multimedia information retrieval or electronic commerce on the Internet (pg. 209, Introduction). It would be obvious that in for the agent to retrieve documents from various sites the agent is being sent to application servers, file servers, computing elements, etc. Therefore, it would be obvious to one skilled in the art that the sites are file servers, applications servers or computing elements.

As to claim 13, refer to claim 15 for rejection.

As to claim 25, CHEN teaches the set of transactions is to install software (copied Scout) (via copy the Scout to execute in the remote system) (pg. 216, "The Master instance knows beforehand which virtual sites have to be visited. (This can be achieved by looking at the virtual graph.. This information is conveyed to the first Scout instance, and then to the next Scout instance, and then to the Scout instance, so on. This way, each Scout instance knows whether it is the one to stop the creation of another.").

As to claims 34 and 35, CHEN teaches delivering a message (message) from the coordinator transaction agent (Master instance) to one of the plurality of transaction agents, i.e. the first transaction agent (Scout instances), instruction the state machine to

transition state (pg. 216, The Multiple State machine model, "Each object in this model is a state machine, which is an instance of a state machine type... In this model, state machines can receive input messages and send out output messages....MSM model can support both the mobility and interaction behavior of agents. This is because each agent's behavior is modeled as a state machine; the interaction among agents is models by the message-sending among these state machines; the migration/cloning of an agent is by sending a message from the agent to a specific site to create a new copy of itself and ending/continuing the executing in the current site."; pg. 219, 5.1.2 An example, "... In op_seq1, the instance of Scout will do the following....The information above will be used in Step three to revise templates and build the final state machine."; see also pages 219-222 that shows how the state machines create other objects and interact).

As to claim 36, CHEN does not explicitly state that the sites as equated above are network elements in particular an EMS. Official Notice is taken in that it is well known in the art that network elements are switches, routers, application servers, file servers, end-user workstations, etc. CHEN teaches the approach is to design mobile agent applications for content-based multimedia information retrieval or electronic commerce on the Internet (pg. 209, Introduction). It would be obvious that in for the agent to retrieve documents or any other data from various sites the agent is being sent to application servers, file servers, etc. Therefore, it would be obvious to one skilled in the art that the sites are file servers, applications servers, or an EMS.

As to claims 37 and 38, CHEN teaches the coordinator transaction agent (Master instance) and the plurality of transaction agents (Scout instances) are mobile agents that reside in agent environments (see abstract and page 209, Introduction).

As to claim 45, refer to claim 25 for rejection.

As to claim 48, refer to claim 36 for rejection.

As to claim 50, refer to claim 37 for rejection.

As to claims 3 and 4, KLEIN teaches the replicated transaction agents autonomously rolling back the state machine based on a criteria, i.e. a time out. (col. 2, lines 18-33).

As to claims 7 and 8, KLEIN teaches the distributed state machine is transitioned in lockstep or in turn (via the agents may commit in a two phase commit protocol (col. 2, lines 41 – col. 3, line 52) or (allowing one agent to finish before another agent finishes) (col. 4, lines 12-22).

As to claim 12, refer to claim 3 for rejection.

As to claims 18 and 19, KLEIN teaches detecting the unsuccessful completion of the current state based on the failure of the transaction agent (agent failed to prepare) to complete the transaction and invoking a roll back (abort) of the set of transactions (via the coordinator determining a fail or abort and messaging all agents to abort) (col. 3, lines 18-43).

As to claims 30 and 31, KLEIN teaches delivering to the coordinator transaction (coordinator) agent a message from the last plurality of transaction agents (agents) notifying the coordinator transaction agent that each of the plurality of replicated transaction agents is prepared to execute the transactions (prepare message) (col. 3, lines 4-43).

As to claims 32 and 33, refer to claims 7 and 8 for rejection.

As to claim 40, KLEIN teaches the detecting and instructing, together represents a distributed two phase commit protocol (col. 3, lines 4-43).

As to claim 41 and 42, refer to claims 3 and 4 for rejection.

As to claim 39, Official Notice is taken in that it authentication between distributed systems is well known in the art and therefore obvious in view of the teachings of CHEN and KLEIN to authenticate the remote systems before messages, i.e. software, is sent

and executed on the remote system such that malicious code or virus does not corrupt the remote system.

3. Claims 5, 6, 9-11, 20-22, 24, 26-29, 44, 46, 47 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over CHEN in view of KLEIN as applied to claim 1 above, and further in view of "Intelligent and Mobile Agents and their Applicability to Service and Network Management" by EURESCOM and Applicant's Admitted Prior Art (APA).

CHEN and KLEIN substantially disclose the invention above. However, neither reference teaches the agent capable of enabling, disabling or labeling cross connects of network elements.

EUROSCOM teaches mobile agents are used for a) automating the detection, diagnosis and repair of software problems, b) support helpdesk technicians in their manual diagnosis and repair duties, c) help mobile users stay in contact with colleagues through dynamic configuration of services and e) enable customers, service provides, and network providers to negotiate automatically for services and network resources (pg. iii). It defines agents as software that act on behalf of another entity (pg. 2). EUROSCOM also teaches that agents perform remote Management Network Nodes configuration, i.e. to measure the travel time between two sites, size at departure, and size at arrival, reliability, creation and activation time to thereby configure the connection of Network nodes (pg. 11). However, EUROSCOM does not teach that the

configuration includes enabling and disabling, i.e. provisioning and un-provisioning, facilities for cross connect or labeling a cross connect.

APA teaches that transactions are typically performed by a user to enable and disable cross connections (pg. 1-2, paragraphs 4-6). Therefore, it would be obvious to one skilled in the art at the time of the invention that since transactions are performed by mobile agents, to alleviate the users from handling network management configuration (EUROSCOM), it would be obvious that the agents perform cross connections and all functions thereof. Therefore, it would be obvious to combine the teachings of CHEN with the teachings of KLEIN, EUROSCOM and APA in order to facilitate the autonomous performance of cross connection of network nodes by mobile agents.

Response to Arguments

Applicant's arguments filed August 29, 2005 have been fully considered but they are not persuasive. Applicant argues that the combination of Chen's adlets with the Klein's distributed transaction synchronization would not teach or suggest Applicants independent claims because the combination does not teach or suggest the Master replicating itself because the Scout and Master adlets are different types. Applicant also states the combination does not disclose replicating adlets to plurality of network elements nor coordinating the state machine of each Scout adlet to implement a distributed state machine. The examiner disagrees. Chen teaches a multiple state machine combined approach that supports both mobility behavior, as disclosed by Loke

which uses an itinerary and starts from a first site where an agent migrates from site to site and executes an action at each site it visits (pg. 210, Behavior specification, 2nd paragraph) and interaction behavior of agents wherein the migration/cloning of an agent is by sending a message from the agent to a specific site to create a new copy of itself and then ending/continuing the execution in the current site (pg. 211, 1st paragraph). Chen also teaches adlets exchange messages with one another and change their internal state through inter-adlet operations (pg. 213, Arcs for operation 1st – 6th paragraph) wherein one of the operations performed by the adlets is a clone operation (pg. 214, 3rd indentation). The master adlet of Chen can create additional adlets. Therefore, since the adlet has a clone operation, it can clone itself other adlets, i.e. Scout adlets, to function at different sites. Therefore, Applicants argument that the Master adlet does not replicate itself is not persuasive. Adlets are capable of replicating themselves via the clone operation and can communicate or change their internal state through other operations performed. Applicants argument that the replicating is not to a plurality of network elements or the coordinating of the state machine of each adlet is also unpersuasive. Chen teaches adlets exchange messages with one another and change their internal state through inter-adlet operations (pg. 213, Ars, for operation 1st – 6th paragraph). In addition, Chen teaches a Be operation wherein an adlet changes its state through implicit interaction with other adlets, which might involve an arbitrary number of message exchanges (pg. 214, 4th indentation). Therefore, Chen teaches coordinating the state machine of each Scout adlet to implement a distributed state machine. Chen teaches that the adlets are migrated from site to site and thereby

cloned for a particular function. However, Chen does not explicitly detail that the sites are network elements, i.e. physical computer systems, routers, etc. Klein teaches the communication of agents that comprise state machines among different data processing systems, i.e. network elements (col. 1, lines 14-27; col. 1, lines 61-65). Therefore, Klein in combination with Chen teaches the cloning and migrating of agents comprising state machines and coordinating the state changes among the agents executing on the plurality of network elements, e.g. the state communication among agents from one data processing system to another data processing system. The claims as written detail the following:

- Claim 1, "coordinator transaction agent causing itself to be replicated onto the plurality of network elements according to said itinerary ...coordinator transaction agent coordinating operations of...said state machine in each of said replicated transaction agents to implement a distributed state machine".
- Claim 16, "instantiating a coordinator transaction agent that includes an itinerary and a state machine, said itinerary indicating a plurality of network elements onto which said transaction agent is to be replicated...said coordinator transaction agent transmitting an indication for delivery to each of said replicated transaction agents that instructs them to perform a currently selected step of said state machine in their network element...coordinator transaction agent receiving from each of said replicated transaction agents an indication of their completion of said currently selected step...said coordinator transaction agent selecting a next

state as said currently selected state of said state machine and repeating steps D and E until a final state of said state machine is reached.

- Claim 17, "receiving state advance communication from said coordinator transaction agent, said replicated transaction agent in said network element causing the performance of the next state of said state machine...responsive to said replicated transaction agent in said network element detecting successful or unsuccessful completion of the current state in its network element, causing the transmission of an indication to said coordinator network element".
- Claim 23, "replicating a plurality of transaction agents from the coordinator transaction agent to said plurality of network elements as described in said itinerary component...instructing said state machines of said plurality of transaction agents to alter state upon executing a set of transactions".
- Claim 43, "coordinator transaction agent including, a state machine to coordinate a distributed sequence of transactions across a plurality of network elements."

All of the cited limitations are met by the combination of Chen and Klein as detailed in the rejection and arguments provided herein.

Applicant argues that the combination of Chen, Klein, EUROSCOM, and APA does not teach the the use of mobile agents can be used to administer network elements. The examiner disagrees. Both Chen and Klein teach the use of mobile agents in performing transactions at remote or different sites as detailed above. Euroscom teaches agents execute in a network management environment performing acts on behalf of another entity, i.e. a user, to carry out a task or role on behalf of that

user (pg. 2, "What is an Agent). The agent performs this activity without further unnecessary intervention from the client wherein the agent has control over its own actions and state (pg. 2, Independence of Action) and can move around a network, e.g. from one host machine to another, in order to carry out its task (pg. 3, May be able to move around a network). Some of the agents' functions are to install software (pg. 6, Automated Maintenance; pg. 10, "use of agents for automated software installation) but also automates the detection, diagnosis, and repair of software problems / services and to automate their usage (pg. iii). Applicants admitted prior art discloses that it is well known to those of ordinary skill in the art that users typically enabled and disabled cross connections (pg. 1-2, paragraphs 4-6). Therefore, it would be obvious from the combination that since the purpose of agents are to handle functions on behalf of another entity, i.e. a user, that an agent is capable of automating cross connections thereby alleviating the user of performing the task. Therefore, Applicants argument that there is not teaching or suggestion in the combination that mobile agents can be used to administer network elements is unpersuasive, because agents as detailed in Euroscom performs network management functions on network elements for the user. Applicant argues that the examiner is providing hindsight in stating that the references do not teach or suggest using mobile agents for cross connection functions as detailed. The examiner disagrees. First, as proper under *In re Venner,* broadly providing an automatic or mechanical means (via the agents) to replace a manual activity that accomplished the same result is not sufficient to distinguish over the prior art (see M.P.E.P. 2144.01, III). Secondly, Euroscom provides the motivation of using agents for

manual operations by stating that agents act on behalf of users to carry out a task or a role on behalf of the user (pg. 2) wherein a user task comprises the actions of performing cross connections as detailed by Applicants Admitted Prior Art. Thus the use of agents to perform the functions of cross connections would be understood by one of ordinary skilled in the art to be capable of being performed by agents. Therefore, the rejection is proper as detailed above.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lewis A. Bullock, Jr. whose telephone number is (571) 272-3759. The examiner can normally be reached on Monday-Friday, 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

November 21, 2005

LEWIS A. BULLOCK, JR.
PRIMARY EXAMINER